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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,319	10/22/2003	Philip D. Nguyen	2003-IP-010380U1	5926

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EXAMINER	
LIGHTFOOT, ELENA TSOY	
ART UNIT	PAPER NUMBER
1715	

NOTIFICATION DATE	DELIVERY MODE
07/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/691,319	NGUYEN ET AL.	
	Examiner	Art Unit	
	ELENA Tsoy LIGHTFOOT	1715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-29,31,32,35-46,48-61 and 63-77* is/are pending in the application.

4a) Of the above claim(s) *20-24,27,37-41,44,50-61,63,64 and 67* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18,19,25,26,28,29,31,32,35,36,42,43,45,46,48,49,65,66 and 68-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

Amendment filed on June 22, 2010 has been entered. Claims 18-29, 31, 32, 35-46, 48-61 and 63-77 are pending in the application. Claims 20-24, 27, 37-41, 44, 50-61, 63, 63, 64, and 67 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims examined on the merits are 18, 19, 25, 26, 28, 29, 31, 32, 35, 36, 42, 43, 45, 46, 48, 49, 65, 66 and 68-77.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 18, 19, 25, 28, 31, 32, 35, 36, 42, 45, 48, 49, 65, 66, 68-73, 75 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al (US 5,381,864) in view of Martin et al (US 4,969,523), further in view of Beck et al (US 4,493,875).

The cited prior art is applied here for the same reasons as set forth in paragraph 2 of the Office Action mailed on 5/17/2010.

As to current amendment, the cited prior art fails to teach combining the final treating composition with a carrier fluid. However, incorporation of a carrier or diluent was held to have been obvious. *In re Lerner* 169 USPQ 51 (CCPA 1971); *In re Rosicky* 125 USPQ 341 (CCPA 1960). It is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987). Thus, the final treating

composition may be diluted to the desired concentration of particles depending on particular use of a final product.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined with the final treating composition with a carrier fluid in the cited prior art before injecting a treating composition into a well with the expectation of providing the desired concentration of particles depending on particular use of a final product.

3. Claims 18, 19, 25, 28, 31, 32, 35, 36, 42, 45, 48, 49, 65, 66, 68-73, 75 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Martin et al '523 and Beck et al '875, as applied above, and further in view of Sielcken et al (US 5585524).

The cited prior art is applied here for the same reasons as set forth in paragraph 3 of the Office Action mailed on 5/17/2010.

As to current amendment, the new limitation would be obvious for the same reasons as discussed above.

4. Claims 18, 19, 25, 26, 28, 31, 32, 35, 36, 42, 43, 45, 48, 49, 65, 66, 68-75 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphey et al (US 5,128,390) in view of Martin et al '523 and Beck et al '875, further in view of Sielcken et al '524.

The cited prior art is applied here for the same reasons as set forth in paragraph 4 of the Office Action mailed on 5/17/2010.

As to current amendment, the new limitation would be obvious for the same reasons as discussed above.

5. Claims 26, 43 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Martin et al '523 and Beck et al '875 or over Nguyen et al '864 in

view of Martin et al '523 and Beck et al '875, further in view of Sielcken et al '524 or over Murphey et al '390 in view of Martin et al '523 and Beck et al '875, further in view of Sielcken et al '524, as applied above, and further in view of Murphey et al (US 4665988) for the reasons of record set forth in paragraph 5 of the Office Action mailed on 5/17/2010.

6. Claims 28, 29, 45, 46, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al '864 in view of Martin et al '523 and Beck et al '875 or over Nguyen et al '864 in view of Martin et al '523 and Beck et al '875, further in view of Sielcken et al '524 or over Murphey et al '390 in view of Martin et al '523 and Beck et al '875, further in view of Sielcken et al '524, as applied above, and further in view of McDaniel et al (US 20020048676) for the reasons of record set forth in paragraph 6 of the Office Action mailed on 5/17/2010.

Response to Arguments

Applicant's arguments filed June 22, 2010 have been fully considered but they are not persuasive.

A. Rejection of Claims 18-19, 25, 28, 31-32, 35-36, 42, 45, 48-49, 65-66, 68- 73, 75 and 77 under 35 U.S.C. § 103(a) over Nguyen in view of Martin and Beck

Applicants submit that a prima facie case of obviousness has not been established. Applicants submit that the proposed combination of Beck with Nguyen and/or Martin would render the invention of Nguyen unsatisfactory for its intended purpose. With respect to Nguyen, the invention is directed towards the use of a treating composition comprising a particulate blend. See Nguyen Abstract. Example 1 of Nguyen demonstrates the improved results obtained using a blend of particulates relative to samples of both relatively large particulates alone and relatively small particulates alone. Id. at col. 18, I. 24 - col. 19, I. 11. Thus, the principle of operation of Nguyen clearly relies upon the inclusion of a blend of particulates, and the particulates of Nguyen would not be satisfactory for their intended purpose if only a single sized particulate were to be used. As stated by the Examiner, Beck is directed to composite proppant formed by mixing core particles with adhesive and coating the core particles with hollow microparticles to adhere the microparticles to the coated core. Beck at col. 2, I. 65 - col. 3, I. 7.

These particles are cured to form a single sized particulate prior to being placed in a wellbore. Id. Thus, applying the teachings of Beck to the particulate blend of Nguyen would result in the adhesion of the relatively small particulates to the relatively large particulates prior to being placed in the wellbore. In other words, the combined particulates would have a single size, which is contrary to the purpose and functionality of the invention of Nguyen. It should therefore be clear that in forming a rejection based on a combination of Nguyen in view of Beck, the proposed modification renders the particulate blend, which would become agglomerated, unsatisfactory for its intended purpose. Thus, there is no suggestion or motivation to make the proposed modification. See MPEP 2143.01(V). For at least this reason, there is no suggestion or motivation to combine the teachings of Nguyen with the teachings of Beck. Further, the combination of Nguyen and Martin does not disclose all of the elements of independent claims 18, 35, or 68. Even if Nguyen could be modified by the teachings of Martin--a position the Applicants do not adopt--the references would not disclose at least "allowing the density reducing material to adhere to a surface of the coated particulate to create at least one reduced-density, coated particulate in the third flowing stream" and combining the third stream with a carrier fluid prior to being placed in the subterranean formation as required by independent claims 18, 35, and 68. Thus, the combination of Nguyen in view of Martin, further in view of Beck fails to obviate claims 18, 35, and 68.

The Examiner respectfully disagrees with this argument. First of all, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Second, in contrast to Applicants assertion, Nguyen teaches a blend of large particulate material and a small particulate material in a carrier fluid as **one** of embodiments that does not exclude other embodiment with the use of a hardenable resin system.

> Nguyen teaches: "The treating composition used in the methods of the present invention comprises a mixture including both a carrier fluid and a particulate blend. The particulate blend is preferably suspended in the carrier fluid. The particulate blend comprises a large particulate material and a small particulate material. The composition can **also** include a hardenable resin system which will consolidate the particulate blend to form a hard permeable mass. If a hardenable resin system is employed in the treating composition, the resin system can be (a) added to the treating composition at the well site, (b) included as a precoating on the individual particles of the particulate blend, or (c) added to the treating composition using generally any other means commonly employed in the art." (See column 7, lines 29-43).

Third, Nguyen teaches nowhere that the large particulate material and a small particulate material should be present *separately* from each other in a stream in the presence of the hardenable (adhesive) resin especially considering the fact that according to Nguyen et al the hardenable epoxy resin ***rapidly* coats** particulate materials such as sand, glass beads or *synthetic*

resin pellets in a treating composition in the presence of the gelled aqueous carrier liquid and a surface active agent (See column 12, lines 23-28). Thus, one of ordinary skill in the art would reasonably expect that SVDB *beads* of Martin and Beck added to the stream comprising particles coated with the (***adhesive***) epoxy resin would not stay as a blend of separate particles but **would adhere** to the (adhesive) resin on the particles in the stream because Nguyen et al '864 teaches that the (adhesive) epoxy resin **rapidly coats** *synthetic resin pellets* in the stream.

C. Rejection of Claims 18-19, 25-26, 28, 31-32, 35-36, 42-43, 45, 48-49, 65-66, 68-75 and 77 under 35 U.S.C. § 103(a) over Murphey in view of Martin, Beck and Sielcken

Applicants submit that Murphey '390 and Martin cannot be modified with Beck because the teachings of Martin contradict those of Beck. The principle of operation of Martin clearly relies upon the inclusion of a blend of particles or sequential slugs of particles with distinct differences in density. The particles of Martin would not function the same if only a single sized particle with a single density were used. As noted above in Section II. A, Beck is directed to composite proppant formed by mixing core particles with adhesive and coating the core particles with hollow microparticles to adhere the microparticles to the coated core. Beck at col. 2, I. 65 - col. 3, I. 7. These particles are cured to form a single sized particulate with a density approaching the density of the fluid prior to being placed in a wellbore. Id. Thus, applying the teachings of Beck to the particle blend or sequential slugs of Murphey '390 in view of Martin would result in the formation of a single composite particle with a single density prior to being placed in the wellbore. In other words, the combined particles would have a single size and a single density, which is contrary to the purpose and functionality of the invention of Martin. It should therefore be clear that the individual references teach away from the combination of the references as presented by the Examiner. Applicants note that Sielcken does not provide any teachings for or against the combination of Murphey '390, Martin, and Beck as Sielcken is directed towards a method for the preparation of an aldehyde and does not discuss particulates or hydrocarbon production. Specifically, the Examiner cites Sielcken for the alleged teaching of using a CSTR to carry out the continuous mixing process. Office Action at 12-13. Therefore, Applicants respectfully assert that independent claims 18, 35, and 68 and their dependent claims are not rendered obvious by the combination of Murphey '390, Martin, Beck, and Sielcken.

The Examiner respectfully disagrees with this argument. Murphey teaches that the hardenable polyepoxide resin composition substantially **instantaneously coats** the particulate material in the presence of the gelled aqueous carrier liquid when a surface active agent is also present (See column 4, lines 20-26). Thus, the stream of Murphey would contain adhesive coated particles. **Martin** on the other hand teaches that proppant particles should have density closely matching the density of the carrier fluids to avoid settling problem by **combining stream containing dense particles such as sand with stream containing low density particles such**

as SVDB. Although Martin et al does not explicitly teach that sand/SVDB particulate material that closely matches density of carrier liquids is composite particle having dense core particles coated with low density particles, one of ordinary skill in the art would easily recognize that the dense sand particles and the SVDB particles have to form composite particles in order to achieve the desired "middle" density matching density of the carrier liquid. **Beck** is cited to show that a composite proppant having reduced density approaching densities of typical fracturing fluids may be produced by coating large dense particles with small particulates of reduced density (See column 1, lines 58-69). The composite particles may be formed by (1) mixing the core particles with adhesive to provide adhesive-coated core particles, (2) while the adhesive is tacky, mixing the coated core particles with hollow microparticles (preferably hollow ceramic microparticles) to adhere a plurality of the microparticles to each coated core and (3) curing each adhesive composition to a nontacky state while keeping the individual coated core particles substantially out of adherent contact with each other (See column 2, lines 55-68) (See column 3, lines 1-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added stream containing SVDB particles to stream containing sand particles coated adhesive epoxy resin in Murphey with the expectation of providing the desired composite particles having density closely matching the density of the carrier fluids to avoid settling problem, as taught by Martin and Beck.

Note that both Martin and Beck teach forming a composite proppant having density closely matching the density of the carrier fluids by combing sand particles and SVDB particles. Beck teaches the composite particles may be formed by adding SVDB particles to adhesively coated sand particles. Since Murtin does not require curing the composite proppant, it is irrelevant whether or not Beck teaching curing composite particles before injecting particles into well.

Thus, in contrast to Applicants argument, Beck does not contradict Martin.

As to Sielcken, see previous response to Applicants' arguments.

III. Request for Evidentiary Support

Once again, should any of the above asserted rejections be maintained, Applicants respectfully request appropriate evidentiary support. Additionally, if the Examiner is relying upon "common knowledge" or "well known" principles to establish the rejection, Applicants request that a reference be provided in support of this position pursuant to MPEP § 2144.03. Furthermore, to the extent that the Examiner maintains any rejection based on an "Official Notice" or other information within the Examiner's personal knowledge, Applicants respectfully request that the Examiner cite a reference as documentary evidence in support of this position or provide an affidavit in accordance with MPEP § 2144.03 and 37 C.F.R. 1.104(d)(2).

The request is denied because the Examiner relied only on cited references.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1715

July 19, 2010

/Elena Tsoy Lightfoot/